



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/732,425 | 12/07/2000 | Kin Li | 94-348D | 1782 |

7590

04/26/2002

Conrad O. Gardner
7755 E. Marginal Way S.
P.O. Box 3707, M/C 13-08
Seattle, WA 98124-2207

EXAMINER

AHMED, SHAMIM

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 04/26/2002

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,425

Applicant(s)

LI ET AL.

Examiner

Shamim Ahmed

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Process for sterilization using an atmospheric pressure glow discharge plasma source.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jacob (4,976,920) in view of Gut Boucher (4,207,286) or Roth et al (5,414,324).

Jacob discloses a method for sterilization of medical or dental devices or materials, wherein the devices are subjected to an atmospheric pressure plasma chamber comprising the steps of: (1) inducing an RF power to create an atmospheric pressure plasma; (2) coupling a gas manifold to the plasma in an oxygen mixture gas; and (3) exposing a substrate to be sterilized to the plasma or surface treatment of an object (abstract, col.2, lines 33-51, lines 66-col.3, line 1; col.4, lines 8-11). Jacob also discloses that an object can be sterilized under atmospheric pressure conditions, where no vacuum capability is required (col.13, lines 19-22). Jacob fails to disclose the

Art Unit: 1746

coupling of the RF power supply through a coaxial transmission line to a suitable designated tuning network.

However, Gut Boucher discloses a method of operating a plasma chamber for sterilizing objects, wherein an RF power supply is coupled through a coaxial transmission line to a suitably designed tuning network in order to maximize RF energy coupling into the discharging gas for producing the discharge plasma efficiently (col.9, lines 61-col.10, line 10). Additionally, Roth et al teach that a steady-state, glow discharge plasma is generated at one atmosphere of pressure, wherein a matching network is added to the circuit to produce the most stable, uniform glow discharge plasma (col.2, lines 24-30).

Therefore, it would have been obvious to one with ordinary skill in the art at the time of claimed invention to employ Gut Boucher or Roth et al's teaching into Jacob's sterilization process in order to produce a stable and uniform discharge plasma efficiently as taught by either Gut Bucher or Roth et al.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Laroussi (5,876,663) discloses a process for sterilization of liquids using steady-state glow discharge plasma of oxygen at one atmospheric pressure (col.1, lines 65-col.2, lines 7 and col.4, lines 5-7) and Fraser et al (3,948,601) disclose a sterilization process utilizing oxygen plasma at low pressure, which is below an atmospheric pressure.

Art Unit: 1746

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (703) 305-1929. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-305-7718 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Shamim Ahmed
Examiner
Art Unit 1746

SA
April 23, 2002



RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700